

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
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## PCT

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference <b>AMN.P0005PCT</b>		Date of mailing (day/month/year) <b>09 MAR 2005</b> <b>FOR FURTHER ACTION</b> See paragraph 2 below
International application No. <b>PCT/US04/12583</b>	International filing date (day/month/year) <b>23 April 2004 (23.04.2004)</b>	Priority date (day/month/year) <b>24 April 2003 (24.04.2003)</b>
International Patent Classification (IPC) or both national classification and IPC <b>IPC(7): G 02F 1/13 and US Cl.: 349/13,77,138</b>		
Applicant <b>ALPHAMICRON, INC.</b>		

**1. This opinion contains indications relating to the following items:**

- ☒ **Box No. I**      Basis of the opinion
- ☐ **Box No. II**      Priority
- ☐ **Box No. III**      Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ **Box No. IV**      Lack of unity of invention
- ☒ **Box No. V**      Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ **Box No. VI**      Certain documents cited
- ☐ **Box No. VII**      Certain defects in the international application
- ☐ **Box No. VIII**      Certain observations on the international application

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Thoi V. Duong Telephone No. 571-272-2292
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Form PCT/ISA/237 (cover sheet) (January 2004)

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**WRITTEN OPINION OF THE  
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**Box No. I Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. V Reasoned statement under Rule 43 *bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>10-11, 14-17, 22-24</u>	YES
	Claims <u>1-9, 12, 13 and 18-21</u>	NO
Inventive step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-24</u>	NO
Industrial applicability (IA)	Claims <u>1-24</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations:

Please See Continuation Sheet

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**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

**V. 2. Citations and Explanations:**

Claims 1-5 and 21 lack novelty under PCT Article 33(2) as being anticipated by Hama (US 5,532,705). As shown in Figs. 1A, 1B, 2 and 3, Hama discloses an accessory article 1 comprising a liquid crystal cell 3 in a main body 1a, formable (flexible) member 2a, 2b (wrist bands) for carrying said liquid crystal cell, a driving circuit 13, a clasp 1f for connecting distal ends, wherein said clasp carries said driving circuit (col. 6, line 27 through col. 7, line 21).

Claims 6-13 and 24 lack an inventive step under PCT Article 33(3) as being obvious over Hama (US 5,532,705) in view of Palffy-Muhoray et al. (US 6,239,778 B1). Hama discloses an accessory article as claimed. However, Hama does not disclose the structure of the liquid crystal cell with polarizer-free. As shown in Figs. 1A and 1B, Palffy-Muhoray et al. discloses a liquid crystal cell comprising a pair of opposed substrates 12a, 12b, each having an electrode 14a, 14b; a chiral nematic liquid crystal host 22 and a dye guest 24; and an alignment layer 18a, 18b. Palffy-Muhoray et al. also discloses in Fig. 2 a driving circuit and the liquid crystal cell is polarizer-free (col. 2, lines 23-37 and line 55 through col. 3, line 30; col. 4, line 15-52 and col. 5, lines 31-57). Thus, it would have been obvious to employ the liquid crystal cell of Palffy-Muhoray et al. so as to obtain a device of continuous attenuation of light transmission without the need for polarizing the light (col. 1, lines 53-55).

Claims 6, 7, 9 and 12-20 lack an inventive step under PCT Article 33(3) as being obvious over Hama (US 5,532,705) in view of Ishii et al. (US 5,148,297). Hama discloses an accessory article as claimed. However, Hama does not disclose the structure of the liquid crystal cell. As shown in Fig. 4, Ishii et al. discloses a liquid crystal cell comprising a pair of outer substrates 11a, 11b, each having an outer electrode 14a, 14d disposed thereon; one interposed substrate 16 having opposed surfaces, each having an interposed electrode 14b, 14c disposed thereon, said interposed electrodes facing said outer electrodes, said outer substrates and said interposed substrates forming gaps therebetween; and a different liquid crystal material 13a, 13b (GH mode) received in each of said gaps. Fig. 7 of Ishii et al. shows a driving circuit as claimed. Fig. 8 of Ishii et al. shows a reflective electrode 15b formed on the substrate 11b. (See also col. 4, lines 54-65, col. 5, lines 46-59 and col. 6, lines 10-13). Thus, it would have been obvious to employ the structure of the liquid crystal cell of Ishii et al. to improve a utilization factor of light (col. 7, lines 5-8).

Claims 15, 17 and 23 lack an inventive step under PCT Article 33(3) as being obvious over Hama (US 5,532,705) in view of Varaprasad et al. (US 6,001,486). Hama discloses an accessory article as claimed. However, Hama does not disclose a layer having light altering properties. Varaprasad et al. discloses a tinted glass substrate comprising a diffuser surface coating (col. 2, lines 13-19 and col. 9, lines 46-48). Thus, it would have been obvious to form a layer having light altering properties to reduce gloss (col. 2, lines 13-19).

Claims 15-17, 22 and 23 lack an inventive step under PCT Article 33(3) as being obvious over Hama (US 5,532,705) in view of Fix et al. (US 6,466,298 B1). Hama discloses an accessory article as claimed. However, Hama does not disclose a layer disposed on one of the substrates to alter the appearance of at least selected portions of said cell. Fix et al. discloses a reflective coating disposed on a tinted substrate for protection against solar radiation (col. 11, lines 1-24). Thus, it would have been obvious, as taught by Fix et al., to form a reflective coating disposed on a tinted substrate to improve visual comfort (col. 11, lines 1-5).

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**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Claims 1, 2, 6-9, 12, 13 and 18-20 and 21 lack novelty under PCT Article 33(2) as being anticipated by Moddel et al. (US 5,943,104). As shown in Figs. 1, 3A and 3B, Moddel et al. discloses an accessory article comprising a liquid crystal cell 14 and a formable member 12 for carrying said liquid crystal cell. Fig. 6 shows a driving circuit and the liquid crystal cell comprising a pair of outer substrates 62, 64, each having an outer electrode 24 disposed thereon; one interposed substrate 66 having opposed surfaces, each having an interposed electrode 24 disposed thereon, said interposed electrodes facing said outer electrodes, said outer substrates and said interposed substrates forming gaps therebetween; and a different chiral nematic liquid crystal material 42 (GH mode) received in each of said gaps (col. 1, lines 49-64; col. 5, lines 36-52 and col. 8, line 63 through col. 9, line 18).

Claim 14 lacks an inventive step under PCT Article 33(3) as being obvious over Moddel et al. (US 5,943,104) in view of Witt (US 4,106,217). Moddel et al. discloses an accessory article as claimed. However, Moddel et al. does not disclose the electrodes being patterned to generate an indicia when applying an electric field to said electrodes. As shown in Fig. 3, Witt discloses an accessory article having indicia placed below the liquid crystal display 39 to permit the operator to easily operate the student's flight glasses during actual flight, wherein a switch 45 in a keyboard control box 37 is utilized to control the glasses (col. 5, lines 4-66). Thus, it would have been obvious to have electrodes patterned to generate an indicia when applying an electric field to said electrodes so as to permit the operator to easily determine when the student's lenses are clear or opaque (col. 5, lines 4-14).